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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/045,472	11/08/2001	Alok Chandra Ratogi	8920-000007	9771
27572	7590	12/19/2003	EXAMINER	
HARNES, DICKEY & PIERCE, P.L.C.			CROSS, LATOYA I	
P.O. BOX 828				
BLOOMFIELD HILLS, MI 48303			ART UNIT	PAPER NUMBER
			1743	

DATE MAILED: 12/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/045,472	Applicant(s) RATOGI ET AL.	
	Examiner LaToya I. Cross	Art Unit 1743	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 November 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 20-28 is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Observations

Claim 6 recites "the evaporated electrode", for which there is no antecedent basis in the base claim.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-15 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 5,082,789 to Morrison et al.

Morrison et al teaches a thin film gas sensor for detecting alcohols, specifically ethanol in breath samples. The gas sensors comprise bismuth molybdate deposited onto a thin film substrate. Electrical contacts are also deposited onto the substrate, as recited in claim 1 (col. 2, lines 27-29, col. 6, lines 51-55). With respect to claim 2, the substrate is taught as being glass or quartz (col. 6, lines 47-49). The contacts are made of gold, as recited in claim 6 (col. 6, lines 51-55). With respect to claims 3 and 4, the ratio of bismuth to molybdenum is 2:3 or 2:2 (col. 6, lines 39-46). Example 2 of the reference teaches applying the electrical contacts by vacuum evaporation, as recited in claim 5. Figure 6a, example D, shows 10 ppm ethanol being detected, as recited in claim 7. Figure 6a also show sensitivity for ethanol from 1 ppm to 100 ppm. With respect to the change in resistance (claims 8 and 9) and the storage stability (claim 11), it is assumed that these properties are inherently present because the ethanol sensor claimed by Applicants is the same as that taught by Morrison et al. Because of this, it is

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presumed that the properties are the same, absent evidence to the contrary. With respect to the method preparing the gas sensors, Morrison et al teach depositing a precursor solution of bismuth molybdate solution in a 1:1 ratio. The powder was melted and vacuum evaporated onto a quartz substrate until a thin film was formed. The film was calcined at a temperature of 400°C. Next, gold electrical contacts were applied by evaporation onto the substrate. See Examples 1 and 2.

Therefore, for the reasons set forth above, Applicants' claimed invention is deemed to be anticipated, within the meaning of 35 USC 103 in view of the teachings of Morrison et al.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 16, 17 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morrison et al in view of US Patent 5,252,140 to Kobayashi et al.

The disclosure of Morrison et al is described above.

With respect to claims 16, 17 and 19, Morrison et al differs from the instantly claimed invention in that there is no teaching of spray pyrolysis or thermal evaporation for depositing the thin film or electrode.

Kobayashi et al teach that spray pyrolysis and thermal evaporation are conventional methods for depositing film layers onto thin film devices, where the substrate is glass or silica. It would have been obvious to one of ordinary skill in the art to use any known deposition method, such as spray pyrolysis or thermal evaporation to deposit the thin film onto the substrate in Morrison et al. Both spray pyrolysis and thermal evaporation have proven to be suitable techniques that provide stabilized properties at a low cost.

Therefore, for the reasons set forth above, Applicants' claimed invention is deemed to be obvious, within the meaning of 35 USC 103 in view of the teachings of Morrison et al and Kobayashi et al.

Allowable Subject Matter

6. Claims 20-28 are allowed.

7. The following is a statement of reasons for the indication of allowable subject matter:

With respect to claims 20-28, the prior art of record fails to teach or suggest preparing a solution of bismuth molybdenum hexanoate by dissolving molybdenum trioxide in oxalic acid, adding 2-ethyl hexanoic acid, heating and adding bismuth trioxide. Morrison et al teach dissolving ammonium molybdate in NH_4OH and dissolving bismuth nitrate in nitric acid, followed by adding the molybdate solution to the bismuth solution, a process quite different from that instantly claimed. US Patent 3,578,690 to Becker teaches preparing molybdenum hexanoate solutions, however, a bismuth molybdenum hexanoate solution is not prepared.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to LaToya I. Cross whose telephone number is 703-305-7360. The examiner can normally be reached on Monday-Friday 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill A. Warden can be reached on 703-308-4037. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306. The Examiner is scheduled to relocate on December 17, 2003. After this time, the Examiner can be reached at (571) 272-1256.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

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December 11, 2003


Jill Warden
Supervisory Patent Examiner
Technology Center 1700